IN THE TITLE

Please amend the title as follows:

RADIO FREQUENCY MAGNETIC FIELD UNIT <u>WITH APERATURE</u>

IN THE SPECIFICATION

Please enter the following text beginning at page 2, line 21:

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FIGS. 5A, 5B, 5C, 5D compare lumped element resonant circuits to transmission line analogues.

FIGS. 6A and 6B show alternative circuit models for a tuned TEM resonator according to the present subject matter.

Please amend the specification at page 6, the paragraph beginning at line 3 as follows:

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The second aperture 106 comprises an area 122 including an unobstructed area 124 and a potentially obstructed area ~~126~~. An area is unobstructed, if the area is substantially transparent. An area is obstructed, if the area is not substantially transparent. Preferably, the area 122 does not include an obstructed area. The area 122 is not limited to a particular size.

Please enter the following paragraphs at page 9 between line 17 and line 18:

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A tunable TEM resonator according to the invention has a cavity and a set of transmission line segments which provide a high frequency magnetic field in the cavity. Circuitry including the distributed impedance of all the segments together determines the field frequency.

A preferred form of segment is a length of coaxial transmission line, wherein the center conductor's length is interrupted intermediately, so that the circuitry, of which it forms part, incorporates it as a half-wave resonator balanced with respect to a virtual ground plane of the cavity.

Please enter the following paragraph at page 15 between line 1 and line 2:

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Transmission line theory was used to describe the tuned TEM resonator as a transmission line tuned coaxial cavity resonator. Alternatively, the TEM resonator can be approximated as a balanced comb-line, band-pass filter using a lumped element circuit of FIG 6A. The lumped elements in this circuit approximate the distributed element

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coefficients of the transmission line circuit. Analysis of this lumped element filter circuit model adhering to methods in the literature for "bird-cage" resonators gives inaccurate results. A more accurate approach considers the lumped element filter's distributed stripline analogue in FIG. 6B. This network is a quarter wave (as in FIGS. 5A and 5C) comb-line filter interfaced with its mirrored image at the virtual ground plane of symmetry indicated by the dotted line. Each coaxial element, due to its split central conductor, therefore is a resonant half wave line (mirrored quarter wave pair, as in FIGS. 5B and 5D wave pair) whose bisected center conductor 11 is grounded at both ends to a cavity. The elements 9 are coupled via the TEM slow wave propagation h the cavity. The performance characteristics of this distributed structure are calculated from TEM assumptions.

Because the TEM coil has no endring currents (as does the birdcage), sections of the TEM coil can be removed entirely to provide maximum access with minimal impact to the compensated RF field of the invention volume coil. Because the TEM coil return current is parallel to the coil rungs, the return paths can be discretized to narrow, unobtrusive conductors such as 1 cm strips of transparent screen. The integrity of the TEM cavity is thus approximately maintained while providing through the rung access, in addition to the entirely unobstructed access provided by removal of both an element and its corresponding return path on the cavity.